

### **REMARKS**

Reconsideration and allowance in view of the foregoing amendment and the following remarks are respectfully requested. Claim 1 and 9 are amended without prejudice or disclaimer.

#### **Rejection of Claims 9-16 Under 35 U.S.C. §112**

The Office Action rejects claims 9-16 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Applicants have amended claim 9 to provide other components of a spoken dialog system including an automatic speech recognition module as well as a spoken language synthesizing module that receives input from the natural language module to synthesize a spoken response. Applicants submit that this is no longer a single means claim and therefore, complies with 35 U.S.C. §112, first paragraph.

#### **Rejection of Claims 1-3, 5-6, 8-11, 13-14 and 16-22 Under 35 U.S.C. §103(a)**

The Office Action rejects claims 1-3, 5-6, 8-11, 13-14 and 16-22 under 35 U.S.C. §103(a) as being unpatentable over Arai (U.S. Patent No. 6,173,261) ("Arai") in view of Attwater et al. (U.S. Patent No. 6,173,261) ("Attwater et al."). Applicants respectfully traverse this rejection and submit that even if combined, Arai and Attwater et al. fail to teach each limitation of the claims. Applicants have made a minor amendment to claim 1, not for the purpose of introducing a limitation to overcome the prior art but for clarity.

As we shall see, Applicants shall explain why the combination of references fails to teach the step of modifying the plurality of call types based on the testing. Applicants note that they do not acquiesce that it would be obvious for one of skill in the art to combine Arai with Attwater et al. and reserves that right to argue against the legal combination of these references. However, as we shall see next, Applicants believe that the strength of their argument against Attwater et al. teaching the limitation asserted in the Office Action is sufficient to overcome this rejection.

The Office Action concedes that Arai does not disclose the step of “modifying said plurality of call types based on said testing” and “generating a second natural language understanding model using said modified plurality of call types.” Applicants traverse that this feature would be well known in the art based on the teachings of Attwater et al. The Office Action on page 5 equates the “predefined set of meanings” taught in column 4, lines 12 and 13 of Attwater et al. as the “call types” of claim 1. Applicants note that this portion of the reference discusses Figure 2 which is the architecture of the “natural language call steering system.” See column 3, lines 60-61. Applicants note that that various components shown in Figure 2 do not contemplate utilizing call types. For example, Figure 2 is introduced as “prior art” as is labeled and includes basic components in a spoken dialog system such as a recognizer 10, a classifier 6 (which is also known as a spoken language understanding module), a dialog manager 4, a message generator 8 and a synthesizer 12. These are known components in a spoken dialog system and the concept of the classifier is not introduced as having anything to do with “call types”. Notably, column 4, starting at line 10, teaches that the classifier 6:

“classifies the received graph according to a predefined set of meanings, with reference to a semantic model 20 to form a semantic classification. The semantic classification comprises a vector of likelihoods, each likelihood relating to a particular one of the meanings...the dialog manager 4 uses the semantic classification vector and information about the current dialog state together with information from a dialog model to instruct a message generator to generate a message, which is spoken to the user via speech synthesizer 12.”

Thus, Applicants submit that the more appropriate interpretation of the scope of what is taught by the classifier 6 of Attwater et al. is a standard spoken language understanding unit that has its output communicated to a dialog manager which then instructs the message generator to generate a message for synthesizing a response to a user. There is nothing in the teachings of column 4 that would lead one of skill in the art to, for some reason, believe or equate the predefined set of meaning associated with the operation of the classifier or spoken language

understanding module to refer to “call types” as that term is used in claim 1. Applicants would respectfully submit that the interpretation of the term “call types” in the present application should be consistent with the scope and discussion of those terms in the specification. For example, paragraph [1021] of the present specification discusses an annotation guide that is used by labelers to classify transcribed speech data within the call types defined by the user experience person. The annotation guide helps ensure that different labelers classify similar utterances within the same call type. An example call type is discussed in paragraph [1023] which is a Request (pay\_bill) call type that is used to label utterances that suggest the customer wants to pay his or her bill. Applicants submit that this concept of a call type is not found within the predefined set of meanings of Attwater et al.

The Office Action on page 5 appears to assert that because column 6, lines 1-22, teach the concept of a clustering algorithm which produces clusters of sentences that are regarded as having a same dialog function, that the idea of both generating the clusters and then manually checking the clusters in step 50 is somehow equated with the step of modifying the plurality of call types based on testing of a first natural language understanding module. This is wrong for several reasons. First of all, as has been noted above, the concept of call type is not found within the basic SLU teaching in column 4 of the reference. Next, the citation to column 6 relates to a process of generating data for a local knowledge database 34 and a semantic model 36. What is generated and then manually check in column 6 are certainly not call types but rather clusters of sentences. The process which is described in column 6 certainly does not involve modifying a plurality of call types but involves generating and modifying and manually checking underlying sentences that have been clustered according to their clustering algorithm. Thus, rather than teaching a step of modifying a plurality of call types based on a testing of a first natural language understanding module, Attwater et al. rather teach a process of generating data for a local

knowledge data base and a semantic model which data involves clustered sentences (not call types) that are generated and then manually checked. Because the Office Action inappropriately equates both a predefined set of meanings as corresponding to the call type of claim 1 as well as inappropriately equating this manual checking of clustered sentences as part of a local knowledge database 34, Applicants respectfully submit that even if combined that Attwater et al. and Arai fail to teach at least the limitation of testing the first natural language understanding module, modifying the plurality of call types based on the testing and generating a second natural language understanding model using the modified plurality of call types. Accordingly, Applicants respectfully submit that claim 1 is patentable and in condition for allowance. Claims 2-8 each depend from claim 1 and recite further limitations therefrom and accordingly, are patentable and in condition for allowance.

Claim 9 also includes the step of testing the first natural language understanding model, modifying the plurality of call types based on the testing and generating a second natural language understanding model using the modified plurality of call types and accordingly, is patentable as well as claims 10-16.

Claims 17-20 are patentable for the same reasons set forth above relative to claim 1.

**Rejection of Claims 4, 7, 12 and 15 Under 35 U.S.C. §103(a)**

The Office Action rejects claims 4, 7, 12 and 15 under 35 U.S.C. §103(a) as being unpatentable over Arai in view of Attwater et al. and further in view of Maes et al. (U.S. Patent Publication No. 2003/0088421) ("Maes et al."). Applicants traverse this rejection and do not acquiesce that it would be obvious to one of skill in the art to combine Maes et al. with Attwater et al. and Arai.

However, inasmuch as each of these claims depends from an allowable parent claim, Applicants respectfully submit that these claims are patentable and in condition for allowance.

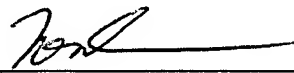


**CONCLUSION**

Having addressed all rejections and objections, Applicants respectfully submit that the subject application is in condition for allowance and a Notice to that effect is earnestly solicited. If necessary, the Commissioner for Patents is authorized to charge or credit the **Novak, Druce & Quigg, LLP, Account No. 14-1437** for any deficiency or overpayment.

Respectfully submitted,

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